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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Markku Rajala

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EXAMINER

HOFFMANN, JOHN M

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/806,775	Applicant(s) RAJALA ET AL.	
	Examiner John Hoffmann	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 February 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 37-52 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 37-52 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/17/09</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/17/2009 has been entered.

Information Disclosure Statement

The information disclosure statement filed 2/17/2009 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered. There was no copy of the Finnish patent document, only an English-language abstract was provided.

Claim Rejections - 35 USC § 103

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

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under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 37-38, 41-44, 46-47 and 50-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi 4388098 in view of Tikkanen FI 988328, Ruppert 6079225, Bocko 4604118 and Kuisl 4564378.

Takahashi is directed to making multi-component lanthanum glass; it is acknowledged that such is not a simple and has impurity problems (col. 1, lines 12-53). Takahashi's solution involves feeding a nebulized lanthanum solution to a burner (see, for example, Takahashi, col. 2, lines 3-29.)

It is known that the use of a nebulizer is problematic: See Tikkanen (first full paragraph, page 4 of the translation) which indicates that nebulized material can nucleate into large droplets. Ruppert also reports the further disadvantages that such nebulizing requires costly pumps and ultrasonic atomizers, and are maintenance intensive and are subject to mechanical wear (col. 1, lines 42-49). Tikkanen teaches the solution to the problem: the use of an atomizing gas at the burner face (page 5, lines 1-6). It would have been obvious to use the Tikkanen atomizer/burner combo to create the lanthanum multi-component glass because it is disclosed as a way of overcoming the prior art problem. Ruppert recognizes substantially the same solution: atomizing at the flame.

Although Tikkanen does not describe the use of a second glass component. Bocko serves as evidence as to what is conventional for making multi-component glass at col. 1, lines 54-68. And starting at col. 4, line 63, Bocko also teaches to use a gas shield to prevent interaction between components. Kuisl at col. 2, lines 17-25 discloses that SiCl_4 reacts with water. Thus one would understand that Takahashi's aqueous compound might react with the SiCl_4 if mixed prematurely – and thus would use the Bocko teaching of using concentric tubes – and preferably with a shield gas.

In summary: it would have been obvious to improve the Takahashi multicomponent method, by using the superior Tikkanen burner augmented by supplying the SiCl_4 in a concentric fume tube around the nebulizer.

IT would have been further obvious to perform routine experimentation to determine the optimal gas introduction location for the oxygen, hydrogen and inert gas, such being a known result effective variable (Tikkanen, page 9).

Claim 38 is clearly met in light of the above discussion.

Claim 41: it is deemed inherent that such would result in homogeneous glass, because substantially the same thing happens. Based on Page 5, lines 6-12, applicant creates two different oxides that combine to become homogeneous. Since the same general conditions exists with the above combination, one would expect the same result.

Claims 42-44, 46-47, 50-51 are clearly met in light of the above discussions.

Claims 39-40, 45, 48, 49 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi 4388098 in view of Tikkanen FI 988328, Ruppert 6079225, Bocko 4604118 and Kuisl 4564378 as applied to claims 37-38, 41-44, 46-47 and 50-51, and further in view of Ainslie 4923279.

Takahashi does not disclose the use of erbium (nitrate) or aluminum. Rather, another rare earth salt (Lanthanum nitrate) and, most generically, "at least one metal salt" (col. 2, line 54) are disclosed. Takahashi uses nitrates as the salt in 4 of the 5 examples.

Ainslie teaches that erbium is one of the two most important rare earths than that one can make oscillators, lasing devices and amplifiers; And that aluminum eliminates

loss of dopants (col. 1, lines 13-26, 48-53; col. 3, lines 19-25 and col. 2, lines 40-45). It would have been obvious to use erbium as the metal because such is most important and to make oscillators, amplifiers and lasing devices. And further obvious to use aluminum so as to prevent the loss of dopants. It would have been further obvious to supply the metal salt as nitrate, because Ainslie clearly favors the use of nitrates.

Response to Arguments

Applicant's arguments filed 2/17/2009 have been fully considered but they are not persuasive.

It is argued that Takahashi does not disclose atomizing the metal salt solution in the vicinity of the flame. Examiner disagrees. The term "the vicinity" has not been defined by applicant, nor is there an art-recognized meaning for the term. So "the vicinity" could be anything within 5 miles - or even 500 miles. Applicant has not reasonably shown that "the vicinity" excludes Takahashi's atomization location. Moreover, Tikkanen provides atomization in substantially a vicinity that is substantially identical to at least one of applicant's embodiment's "vicinity. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

It is argued that Tikkanen does not teach a separate liquid salt component with a vapor glass component. This is not very relevant, because Takahashi teaches the two

claimed components. Tikkanen is merely relied upon to show that one can improve the Takahashi process by changing the location of the atomization.

As to the assertion Official translation was not translated accurately, there is no evidence or even assertion as to what was inaccurate about it. Examiner notes that applicant's certified translation does not indicate page numbers/breaks or contain the drawings. The certified translation also does not include the name of the applicant, the publication date and other information from the first page of the Finnish document. Examiner notes that the Official translation starts the claims section with "Patent claims", but the certified translation omits "Patent". From online translators, it appears to Examiner that the correct translation for "Patentkrav" is "Patent claims". Thus it does not appear that applicant's certified translation is superior to the Official translation.

It is also argued that Applicant's translation of the Tikkanen clearly teaches that the use of gaseous SiCl_4 would be ineffective. Examiner disagrees. 1) The plain reading of translation is that the 3883336 device/method is "slow". 2) that Randall invested the time and money to get a patent, it is presumed that the method was effective enough for Randall's purpose. 3) Even if Tikkanen teaches away from gaseous SiCl_4 , such is related to SiCl_4 alone: Tikkanen does not discuss using more than one component. Takahashi and the '336 document are concerned with the problems of mixed oxides.

As to the assertion that Tikkanen deals with "all components in liquid form": applicant refers to page 2, lines 10-15 of the certified translation. That portion refers to "the substance". The jump from one substance to "all components" is not reasonable.

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In particular in light of the primary reference Takahashi which teaches mixed component glasses is not simple. In other words, one of ordinary skill would not jump from Tikkanen's atomizing of a single substance, to the inference that one would atomize two substances. One considering both references would understand that, depending upon the composition of glass being made, the best process may include one vaporized substance, and one atomized substance. It generally would not be invention to perform routine experimentation to find the best (known) delivery method each reactant to a delivery sight – in particular when it is known that mixed modes of supplying the known reactants is sometimes the best over-all process.

It is argued that Tikkanen teaches away from any gas or vapor feedstock. However, there is no rationale or explanation for this. It is clearly false because oxygen is a feedstock used to create glass; it is supplied as a gas, and it comprises a majority (on both weight and molar %) of SiO₂. Also, Tikkanen does not teach away from Applicant's claimed invention, or from the prior art combination because the disclosure of this reference does not criticize, discredit, or otherwise discourage the invention or the combination. *In re Fulton*, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1145-46 (Fed. Cir. 2004). At best, Tikkanen only criticizes the '336 device - this device is not part of the rejection.

It is also argued that one would not have motivation to combine Takahashi and Tikkanen. The Office has set forth the motivation (from Tikkanen and Ruppert). Applicant disagrees at the top of page 12 of the 2/17/2009 response, but it is unclear what the basis is for the disagreement.

As to the statement it would not have been obvious to “improve the pneumatic nebulizing of Takahasi”. This does not appear to be relevant. Such a modification is not stated in the rejection. See the rejection for the actual obvious modifications.

As to the argument that one skilled would not find that the use of Tikkanen burner structure would lead to more homogeneous multicomponent particles. This too does not appear to be relevant. The rejection is based on making the process easier and/or less costly. The rejection was not based on improving the quality of the Takahashi glass.

As to the pressurization of a tank requiring a pump: The rejection/art refers to “costly” pumps. There is no evidence that pressurizing a gas tank requires a “costly” pump.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). That is, the arguments regarding Ruppert, Bocko and Tuisl seem to only point out that they do not teach all of the claimed features. This is not very relevant because the rejection is only based on the specific teachings of those references as set forth in the rejection. That each does not teach all limitations is not very important.

It is also argued that knowing that SiCl_4 might react with water is not a sufficient incentive to modify the burner structure in Takahashi. However this is merely a

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339conclusion. No evidence or rationale is provided as to why such is not a sufficient incentive.

The arguments regarding Ainslie have been considered. It is argued that one would not combine Ainslies solution doping with the other references. And that Ainslie has nothing to do with flame sprayed glass particles with rare earth dopants. These arguments are not convincing. Ainslie is cited as showing erbium is one of the two most important rare-earth dopants: This is not disputed by applicant. The office found it would have been obvious to use erbium as the metal because such is most important and to make oscillators, amplifiers and lasing devices: This too has not been disputed.

Applicant does argue that there is no suggestion to apply the Ainslie dopant to the flame method, nor was there evidence that one would expect to be successful if one were to try an erbium dopant in the Takahashi method. At col. 3, lines 1-3, Ainslie teaches that solution doping "is one of many known techniques of introducing dopants into optical fibre." In other words: Takahashi conveys that it is known that one can incorporate erbium into a fiber using any of the known technique. Moreover, it is rather basic chemistry: Combining a dopant compound with oxygen at a high temperature, one would expect the dopant to oxidize and thereby create the metal oxide. See the sentence spanning cols. 1-2 of Takahashi. Also, it noted from Applicant's certified translation (page 4, lines 2-4) that "any" aqueous or alcohol solution of a desired ion can be used. Thus is suggestive that there is reasonable expectation of success for using a solution of the desirable erbium ion. Tikkanen (last line of specification) also suggests

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the process can be used for a variety of materials. Also, Ainslie, at col. 4, lines 44-54 indicates that oxygen and heating to about 1900 C ensures conversion of erbium chloride to the oxide form. Thus it is clear it would not be technologically difficult to substitute an erbium compound for the Takahashi compounds to obtain the desired erbium-doped fiber.

Conclusion

All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Hoffmann whose telephone number is (571) 272 1191. The examiner can normally be reached on Monday through Friday, 7:00- 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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